HURRICANE AQUATICS

1701 EAST YUKON DRIVE PHOENIX, AZ 85024
PHONE (602) 619-8492 / FAX (623) 516-8995
I 5746 E-1

City of Tempe
20 East Sixth Street, 2nd Floor
Tempe, Arizona
Request for Proposal No: 10-075
Attention: Lisa Goodman

30 March 2010

Hurricane Aquatics Lake and Fish Maintenance Proposal

Hurricane Aquatics Responsibilities: Hurricane Aquatics will provide lake maintenance services for the city of Tempe, Arizona for the following lakes:

- Kiwanis Lake
- Sellah Lake
- Papago Lake
- Canal Lake
- 8 Lakes of Ken McDonald Golf Course

Weekly service to be performed (on all lakes listed above):

- Inspection of structural features
- Inspection of fish and waterfowl
- Inspection of lakes for algae, aquatic weeds, and aquatic insect infestation
- Notation and reporting of water levels
- Notation and reporting of approximate waterfowl populations
- Removal of surface trash, dead fish, weed and algae accumulations
- Chemical analysis of lake water samples
- Reporting of lake conditions to the Landscape Contract Coordinator

Chemical analysis of lakes:

- Temperature, pH, total alkalinity, copper concentration will be tested every week
- Calcium, hardness, phosphates (total phosphates), and nitrates + nitrates will be tested every month.
- In addition, monthly tests will include ammonia, and Algae identifications. These are important tests and have a tremendous impact on water quality and the health of the fish population.

Chemical Analysis of lakes (continued):

- Twice a month a vertical profile test for dissolved oxygen, % oxygen saturation, temperature, and salinity will be made.
- Water samples taken for testing and on site testing will be done on water from Kiwanis Lake, Sellah Lake, Papago Lake, Canal Lake, and one lake from the Ken McDonald Golf Course.
- *All water testing will be done with laboratory analysis by a certified laboratory, not done with field test kits for accurate results.*
- Results of all water testing will be provided to the landscape contract coordinator following lab analysis.

Chemical Applications:

- Algaecide and aquatic herbicide applications will be used as needed to eradicate or control algae and weed growth and combat aquatic insect infestations as needed. All chemical applications (including amount, type and cost of chemicals) will have the prior approval of the landscape contract coordinator.
- Chemical treatments will be done as soon as possible after the problem is noted. Chemicals needed for routine lake maintenance will stored on the work vehicle so treatments can begin immediately following permission from the landscape contract coordinator.
- Only EPA registered and approved chemicals will be used. MSDS sheets will be provided to the landscape contract coordinator for all chemicals used. All chemicals will be used only as labeled and only in the prescribed application rates.
- All disposal of chemical wastes and byproducts will be done by Hurricane Aquatics.
- Any chemical spills will be immediately cleaned and reported.
- Attached price sheet has costs of all materials used in routine chemical applications.

Fish stocking and consulting:

- The health of the fish populations will be observed on every visit in every lake. Fish will be observed for any signs of external worms, parasites or fin rot. Any sign of disease or stress will be reported.
- Numbers and species of fish lost will be recorded for all lakes.
- Hurricane Aquatics will provide bids and stocking permits for fish stockings.
- See supplement # 1 for estimated fish stocking expenses. The cost of fish will vary from season to season depending on fuel costs, and the availability of fish from fish farms.

- Recommendations for fish stockings will be made based on:
    1. Levels of infestation of aquatic insect larvae, algae and weeds
    2. Amount of fish species already in the lakes
    3. Presence of predator fish.
    4. Overall health of the lake.
    5. The desires of the City of Tempe Landscape Coordinator

- Fish stocking proposal will include:
    1. The species of fish needed
    2. Number of fish required for optimal results
    3. Size range of fish to be stocked
    4. Optimal time of year for stocking

Trash Removal:

- Surface trash (including dead fish, water fowl and landscape debris) will be removed from all lakes on a weekly basis.

Waterfowl Population:

- The waterfowl populations will be observed on every visit. Any ill birds or heavy infestations will be noted to the landscape contract coordinator. In the event of a large population that has a detrimental effect on any lake Hurricane Aquatics will coordinate with the landscape contract coordinator and have the waterfowl relocated.

Structural inspections and water levels:

- On each visit the structural features of the lakes (piers, adjacent sidewalks, and the perimeter and visible bottom of the lake) will be inspected. Any damage seen will be reported to the landscape contract coordinator.
- Water levels in all above listed lakes will be noted and anything unusual will be reported. The city of Tempe will be responsible for maintenance of water levels in all lakes.

Client's Responsibilities: Clients agrees to pay Hurricane Aquatics the described amount during the term of the agreement for the specified maintenance services. Client will be responsible for the expense of maintaining all mechanical and structural features.

Visitation Schedule: Once a week year round at a minimum. Additional visits will be arranged when needed for removal of dead fish or additional chemical treatments.

Responsible Party: City of Tempe, Arizona. This proposal is valid and irrevocable for 90 days after proposal opening date.

Payment Schedule: Payment is due in full within 30 days from receipt of monthly billing invoice.

Monthly Service Fee: $1450.00 per month for all weekly services (excluding lab analysis). $800.00 per month for all water sampling, certified laboratory testing and reporting for a total of $2250.00 / month

Limitations and Exclusions: Hurricane Aquatics is not responsible for any vandalism, acts of god or improper use of lakes or loss of fish from golden algae.

Additional Billing: Chemicals will be billed on an as used basis. All chemical treatments will have prior approval of the landscape contract coordinator before use. Invoices will be billed at the end of the month for all chemicals used during that calendar month. All chemicals used/billed will be listed separately on the invoice by lake treated, chemical used, chemical costs and date(s) of applications.

Insurance / Permits:
Hurricane Aquatics will maintain a general liability policy that covers loss, injury, death or damage to persons or property incurred in the performance of this contract. Hurricane Aquatics will maintain and keep in force all permits and licenses required to perform the work in this contract. Copies of all business and vehicle insurance are provided to the City of Tempe and all insurance will remain in effect during the duration of this contract. Copies of all applicable business and Structural Pest Control Commission licenses are provided. Qualifying Party and Pesticide Applicators License will be carried while on property.

Emergency Call Outs: Call out not related to the performance of Hurricane Aquatics will be billed at a rate of $65.00 per hour.

Fish Disclaimer: Hurricane Aquatics will not responsible for the loss of fish due to problems beyond our control.

END OF PROPOSAL.

Client Signature	**Hurricane Aquatics** **Janet Scheffman / Owner**
Printed name and title	**Date Accepted**

Vendor's Offer

It is required that Offeror complete, sign and submit the original of this form to the City Procurement Office with the proposal response offer. An unsigned "Vendor's Offer", late proposal response and/or a materially incomplete response will be considered nonresponsive and rejected.

Offeror is to type or legibly write in ink all information required below.

Company Name: Hurricane Aquatics, LLC

Company Mailing Address: 1701 E. Yukon Drive

City: Phoenix State: AZ Zip: 85024

Contact Person: Janet W. Scheffman Title: owner

Phone No.: 6026198492 FAX: 623 516 8887 E-mail: HurricaneAquatics@AOL.com

Company Tax Information:

Arizona Transaction Privilege (Sales) Tax No.: 07-625216-0 or

Arizona Use Tax No.:

Federal I.D. No.: 80-0139518

City & State Where Sales Tax is Paid: ,

If a Tempe based firm, provide Tempe Transaction Privilege (Sales) Tax No.:

THIS PROPOSAL IS OFFERED BY

Name of Authorized individual (TYPE OR PRINT IN INK) Janet W. Scheffman

Title of Authorized Individual (TYPE OR PRINT IN INK) owner

REQUIRED SIGNATURE OF AUTHORIZED OFFEROR (MUST SIGN IN INK)

By signing this Proposal Offer, Offeror acknowledges acceptance of all terms and conditions contained herein and that prices offered were independently developed without consultation with any other Offeror or potential Offeror. In accordance with A.R.S. 35-393, et seq., the Offeror hereby certifies that it does not have scrutinized business operations in Iran or Sudan. Failure to sign and return this form with proposal offer will be considered nonresponsive and rejected.

Signature of Authorized Offeror **Date** 03.30.10

Form 201-B (RFP)
(H:/RFP 3-2008)

Price Sheet

ITEM NO.	DESCRIPTION OF REQUIRED MATERIAL, SERVICE OR CONSTRUCTION	UNIT	UNIT PRICE
Basic Services			
1.	Monthly Maintenance to include inspections, fish consultation, trash removal, fish and waterfowl observation, water levels and reporting as specified (excluding chemical treatments)	Per month	$ 1450.—
2.	Lake Water Testing Services and Reports	Per month	$ 800.—
Special Services			
1.	Emergency service calls	Per Hour	$ 65.—
Algaecide / Herbicide Chemical and Application Costs			
1.	Cutrine granular algaecide	Pound	$ 2.50
2.	Cutrine liquid algaecide	Gallon	$ 30.00
3.	Komeen herbicide	Gallon	$ 30.00
4.	Aquatic Dye	Gallon	$ 45.00
5.	Vectobac larvicide	Gallon	$ 55.00
6.	Rodeo	Gallon	$ 10.00
7.	Potassium permanganate	Pound	$ 5.00

* Applicable Tax 8.10%

*** State correct jurisdiction to receive sales tax on the Vendor's Bid Offer, form CS-P201 (B) included in this Invitation for Bid document.**

Less prompt payments discount terms of ___ % ___ days/ or net thirty (30) days. (To apply after receipt and acceptance of an itemized monthly statement.) For bid evaluation purposes, the City cannot utilize pricing discounts based upon payments being made in less than thirty (30) days from receipt of statement.

Ordering and Invoice Instructions

In order to facilitate internal control and accounting, each City Department will order and must be invoiced separately. Monthly invoices must be segregated by City Department number and mailed or delivered directly to the City Customer Department. For most materials, there will be between three (3) and six (6) ordering departments. At the time an order is placed, the Contractor must obtain the ordering department's cost center numbers for billing purposes. The use of the department's cost center numbers will be in addition to the purchase order number. Once a month, the Contractor shall submit a consolidated statement which shall itemize the invoice numbers, invoice date, invoice amounts, and the total amount billed to Accounting. Discount offering will be based upon days from receipt of the consolidated monthly statement. Invoice(s) shall not show previous balances.

Hurricane Aquatics Contractor Qualifications Listing for Lake and Fish Maintenance Proposal (10-075)

20 March 2010

Below are listed 5 lake management accounts currently under service for several years with Hurricane Aquatics. All accounts have the following services:

- Lake and equipment inspections
- Treatment of algae, weed and aquatic insects larvae infestations
- Fish stocking recommendations
- Trash removal
- Weekly service reports

1. Arrowhead Ranch Phase V
   Planned Development Services, Inc.
   8765 W. Kelton Lane
   Bldg A-1, Suite 102
   Peoria, AZ 85382-3574

   Paul Monaghan
   Phone: (623) 298-5984
   Fax: 623 298-5985

2. Solera Chandler HOA
   Premier Community Management
   6360 South Mountain Blvd.
   Chandler, AZ 85249

   Rhonda Scott
   Phone: (480) 802-6996
   Fax: (480) 802-5925

3. Kingswood Parke
   Lone Star Property Mgmt
   P.O. Box 9151
   Surprise, AZ 85374

   Russell Budz
   Phone: (623) 873-4300
   Fax: (623) 505-9500

4. Associated Asset Management
   7740 N. 16th Street, Suite 300
   Phoenix, AZ 85020

   Gunny Marquis
   Phone (602) 288-2616
   Fax: (602) 957-8802

5. Associated Asset Management
   7740 N. 16th Street, Suite 300
   Phoenix, AZ 85020

   Jodi Henderson
   Phone (602) 957-9191
   Fax: (602) 957-8802

Hurricane Aquatics Contractor Qualifications Listing for Lake and Fish Maintenance Proposal (10-075)

30 March 2010

Background and qualifications of principle personnel

▫ Hurricane Aquatics:

Janet Scheffman, the owner of Hurricane Aquatics has been in the aquatics business for 16 years in the Phoenix area and prior to that time was a research scientist for an environmental consulting firm in Florida. Hurricane Aquatics has had a productive business relationship with Dr. Rick Amalfi of Aquatic Consulting and Testing, Inc. and Pat Church of Fresh Catch Fish Company for over a decade.

Janet Scheffman has a bachelors degree in marine science from the University of Miami and has been the current lake manager for the City of Tempe Lakes since 2001.

Attached is a copy of a resume for Janet Scheffman and professional references.

▫ Fresh Catch Fish Company

Pat Ann Church has more than 20 years in the aquatic management field as the president of Aquatic Dynamics, Inc. and FCFC. Pat developed and promoted the use of biological methods to control algae, aquatic weeds and aquatic insect larvae control. Her approach stressing biological control has been effective in controlling costs in lake maintenance and decreasing the use of chemical controls. She works with fish farmers through out the country and with Arizona Game and Fish Department and has developed protocols for the handling and management of fisheries.

▫ Aquatic Consulting and Testing:

AC&T, Inc. in Tempe was established in 1988 and provides expertise in aquatic biology and chemistry. The laboratory is licensed by the Arizona Department of Health Services to perform testing of environmental samples. The staff includes a certified professional lake manager, and a staff of biologists, and chemists. AC&T provides water quality management for municipal water supplies and recreational lakes; provides chemical, physical, and biological sampling and analysis of surface water.

Experience and qualifications of key personnel and Environmental Laboratory license are included in packet.

Arizona Department of Health Services

ENVIRONMENTAL LABORATORY LICENSE

Issued to:

Laboratory Director: **Frederick A. Amalfi, Ph.D**
Owner/Representative: **Elizabeth M. Atkinson**

Aquatic Consulting & Testing, Inc.
AZ0003

is in compliance with Environmental Laboratory's applicable standards for the State of Arizona and maintains on file a List of Parameters for which the laboratory is certified to perform analysis.

PERIOD OF LICENSURE FROM: 04/15/2009 TO: 04/14/2010

Steven D. Baker, Chief
Office of Laboratory Services
Bureau of State Laboratory Services

Office of Laboratory Licensure, Certification & Training
250 North 17th Avenue, Phoenix, AZ 85007

Wednesday, March 11 2009

AZ License: AZ0003

Lab Director: Dr. Frederick A. Amalfi

Lab Name: Aquatic Consulting & Testing, Inc.
Phone: (480) 921-8044
Fax: (480) 921-0049

Program HW

Parameter	EPA Method	Billing Code	Cert Date
Aluminum	EPA 6010B	MTL3	03/20/00
Antimony	EPA 6010B	MTL3	03/20/00
Arsenic	EPA 6010B	MTL3	03/20/00
Barium	EPA 6010B	MTL3	03/20/00
Beryllium	EPA 6010B	MTL3	03/20/00
Cadmium	EPA 6010B	MTL3	03/20/00
Calcium	EPA 6010B	MTL3	03/20/00
Chromium, Hexavalent	EPA 7196A	MTL4	04/18/00
Chromium, Total	EPA 6010B	MTL3	03/20/00
Cobalt	EPA 6010B	MTL3	03/20/00
Copper	EPA 6010B	MTL3	03/20/00
Corrosivity Ph Determination	EPA 9040C	HAZ1	12/05/06
Cyanide	EPA 9010C	PREP2	12/05/06
Dissolved In Water	EPA 3005A	PREP1	03/22/02
Hydrogen Ion (Ph)	EPA 9045D	NIA6	11/28/06
Ignitability (Flash Point)	EPA 1010A	HAZ2	12/05/06
Iron	EPA 6010B	MTL3	03/20/00
Lead	EPA 6010B	MTL3	03/20/00
Lithium	EPA 6010B	MTL3	03/20/00
Magnesium	EPA 6010B	MTL3	03/20/00
Manganese	EPA 6010B	MTL3	03/20/00
Mercury	EPA 7474	MTL10	07/09/08
Molybdenum	EPA 6010B	MTL3	03/20/00
Nickel	EPA 6010B	MTL3	03/20/00
Potassium	EPA 6010B	MTL3	12/09/94
Sediments, Sludges And Soils	EPA 3050B	PREP1	03/20/00
Selenium	EPA 6010B	MTL3	08/20/97
Silver	EPA 6010B	MTL3	03/20/00
Sodium	EPA 6010B	MTL3	03/20/00
Strontium	EPA 6010B	MTL3	03/20/00
Sulfides	EPA 9030B	MISC11	03/20/00
Tclp	EPA 1311	HAZ5	12/09/94
Thallium	EPA 6010B	MTL3	03/20/00
Tin	EPA 6010B	MTL3	03/20/00
Total Metals	EPA 3010A	PREP1	04/02/98
Vanadium	EPA 6010B	MTL3	03/20/00
Zinc	EPA 6010B	MTL3	03/20/00

Total Licensed Parameters in this Program: 37

Program SDW

Office of Laboratory Licensure, Certification & Training
250 North 17th Avenue, Phoenix, AZ 85007
Wednesday, March 11 2009

AZ License: AZ0003 **Lab Name: Aquatic Consulting & Testing, Inc.**

Program SDW

Parameter	EPA Method	Billing Code	Cert Date
Aluminum	EPA 200.7	MTL3	09/30/96
Antimony	EPA 200.9	MTL2	05/02/02
Arsenic	EPA 200.9	MTL2	03/30/95
Barium	EPA 200.7	MTL3	12/09/94
Beryllium	EPA 200.7	MTL3	05/02/02
Cadmium	EPA 200.7	MTL3	12/09/94
Calcium	EPA 200.7	MTL3	12/09/94
Carbon, Total Organic	SM 5310B	MISC1	04/04/08
Chlorine	HACH 8167	NIA3	05/02/02
Chromium Total	EPA 200.7	MTL3	12/09/94
Color	SM 2120B	NIA4	03/22/02
Copper	EPA 200.7	MTL3	12/09/94
Corrosivity	SM 2330B	NIA5	12/09/94
Cyanide	SM 4500 CN C	PREP2	05/02/97
Cyanide	SM 4500 CN E	MISC7	05/02/97
E. Coli By Colilert In Combo W/Total Coliform	SM 9223B	MIC5	12/09/04
Fecal Coliform	SM 9222D	MIC5	03/15/96
Fluoride	SM 4500-F C	NIB9	12/09/94
Hardness	EPA 200.7, CA&MG	MTL3	12/05/02
Hardness	SM 2340C	NIA5	03/22/02
Heterotrophic Plate Count	SM 9215B	MIC9	12/09/94
Hydrogen Ion (Ph)	SM 4500-H B	NIA6	12/05/07
Iron	EPA 200.7	MTL3	12/09/94
Lead	EPA 200.9	MTL2	03/30/95
Magnesium	EPA 200.7	MTL3	12/09/94
Manganese	EPA 200.7	MTL3	12/09/94
Mercury	EPA 245.1	MTL5	03/11/09
Microscopic Particulate Analysis	EPA910/9-92-029	MIC13	01/29/99
Nickel	EPA 200.7	MTL3	12/30/94
Nitrite	SM 4500-NO2 B	NIIB4	04/13/95
Odor	SM 2150B	NIA13	03/16/04
Orthophosphate	SM 4500-P E	NIIB5	12/06/95
Preliminary Filtration	SM 3030B	PREP1	03/22/02
Residue, Filterable (Tds)	SM 2540C	NIIA8	12/09/94
Sediment Concentration	D 3977-979	NIIA8	03/16/04
Selenium	EPA 200.9	MTL2	12/05/06
Silica	EPA 200.7	MTL3	12/30/94
Silver	EPA 200.9	MTL2	03/30/95
Sodium	EPA 200.7	MTL3	12/09/94
Specific Conductance	SM 2510B	NIA7	04/13/95
Strontium	EPA 200.7	MTL3	09/11/95

Office of Laboratory Licensure, Certification & Training
250 North 17th Avenue, Phoenix, AZ 85007

Wednesday, March 11 2009

AZ License: **AZ0003** **Lab Name: Aquatic Consulting & Testing, Inc.**

Program **SDW**

Parameter	EPA Method	Billing Code	Cert Date
Sulfate	SM 4500-SO4 D	NIB2	03/06/00
Surfactant (Mbas)	SM 5540C	NIIA3	03/16/04
Temperature	SM 2550	NIA18	12/05/06
Thallium	EPA 200.9	MTL2	04/13/95
Turbidity, Ntu: Nephelometric	EPA 180.1	NIA9	12/09/04
Uv Absorbing Organic Constituents	SM 5910B	NIB6	03/29/00
Zinc	EPA 200.7	MTL3	12/09/94

Total Licensed Parameters in this Program: 48

Program **WW**

Parameter	EPA Method	Billing Code	Cert Date
Acidity	SM 2310B	NIIA1	03/20/00
Alkalinity, Total	SM 2320B	NIA1	03/20/00
Aluminum	EPA 200.7	MTL3	12/09/94
Ammonia	SM 4500-NH3B	NIIB1	12/05/06
Ammonia	SM 4500-NH3D	NIIB1	12/05/06
Antimony	EPA 200.7	MTL3	02/09/01
Antimony	EPA 200.9	MTL2	03/30/95
Arsenic	EPA 200.7	MTL3	03/30/95
Arsenic	EPA 200.9	MTL2	03/30/95
Ascaris Lumbricoides	SM 10550	MIC11	05/02/02
Barium	EPA 200.7	MTL3	12/09/94
Beryllium	EPA 200.7	MTL3	12/09/94
Biochemical Oxygen Demand	SM 5210B	DEM1	12/05/06
Boron	EPA 200.7	MTL3	12/09/94
Cadmium	EPA 200.7	MTL3	12/09/94
Calcium	EPA 200.7	MTL3	12/09/94
Chloride	SM 4500-CL C	NIA2	12/05/06
Chlorine Residual Total	HACH 8167	NIA3	10/01/07
Chromium Total	EPA 200.7	MTL3	12/09/94
Chromium, Hexavalent	SM 3500-CR D	MTL8	12/09/94
Cobalt	EPA 200.7	MTL3	12/09/94
Copper	EPA 200.7	MTL3	12/09/94
Cyanide Amenable To Chlorination	SM 4500-CN G	MISC7	03/22/02
Cyanide, Total	SM 4500-CN C	MISC34	03/22/02
Cyanide, Total	SM 4500-CN CE	MISC34	03/22/02
E. Coli By Colilert Mpn	SM 9223B	MIC3	03/16/04
E. Coli (Not For Npdes) In Conjunction	SM 9221F	MIC3	03/16/04
Fecal Coliforms By Membrane Filter	SM 9222D	MIC6	03/15/96
Fecal Coliforms By Mtf (May Be Used For Sludge)	SM 9221E	MIC5	12/09/94
Fluoride	SM 4500-F C	NIB3	03/20/00

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Wednesday, March 11 2009

AZ License: AZ0003 **Lab Name: Aquatic Consulting & Testing, Inc.**

Program WW

Parameter	EPA Method	Billing Code	Cert Date
Hardness	EPA 200.7	MTL3	12/05/02
Hardness	SM 2340C	NIA5	10/01/07
Hydrogen Ion (Ph)	SM 4500-H B	NIA6	12/05/06
Iron	EPA 200.7	MTL3	12/09/94
Kjeldahl Nitrogen	4500 NH3B+ORGC	NIIB6	11/27/07
Kjeldahl Nitrogen	SM 4500-NORG C	NIIB3	11/27/07
Lead	EPA 200.7	MTL3	12/09/94
Lead	EPA 200.9	MTL2	03/30/95
Lithium	EPA 200.7	MTL3	03/16/04
Magnesium	EPA 200.7	MTL3	12/09/94
Manganese	EPA 200.7	MTL3	12/09/94
Mercury	EPA 245.7R2	MTL10	07/09/08
Molybdenum	EPA 200.7	MTL3	12/09/94
Nickel	EPA 200.7	MTL3	12/09/94
Nitrate-Nitrite (As N)	SM 4500-N03 E	NIB1	03/22/02
Nitric Acid	SM 3030E	PREP1	04/02/98
Nitric Acid/Hydrochloric Acid	SM 3030F	PREP1	04/02/98
Nitrite (As N)	SM 4500-NO2 B	NIIB4	03/22/02
Orthophosphate	EPA 365.3	NIIB5	03/22/02
Oxygen, Dissolved	SM 4500-O G	NIA12	12/05/06
Oxygen-Consumption Rate	SM 2710B	NIA16	10/29/03
Phosphorus Total	EPA 365.3	NIIB6	05/02/02
Potassium	EPA 200.7	MTL3	03/22/02
Residue Nonfilterable	SM 2540D	NIIA5	12/05/06
Residue Total	SM 2540B	NIIA4	03/22/02
Residue Volatile	EPA 160.4	NIIA7	03/22/02
Residue, Filterable	SM 2540C	NIA8	12/05/06
Residue, Settleable Solids	SM 2540F	NIIA6	12/05/06
Selenium	EPA 200.7	MTL3	03/20/00
Selenium	EPA 200.9	MTL2	03/30/95
Silica, Dissolved	EPA 200.7	MTL3	03/22/02
Silver	EPA 200.7	MTL3	12/09/94
Silver	EPA 200.9	MTL2	03/30/95
Sodium	EPA 200.7	MTL3	03/22/02
Specific Conductance	EPA 120.1	NIA7	12/09/94
Strep, Fecal By Multiple Tube	SM 9230B	MIC7	07/24/03
Strontium	EPA 200.7	MTL3	09/11/95
Sulfate	SM 4500-SO4 D	NIB3	03/21/01
Sulfide	SM 4500-S F	MISC33	03/20/00
Sulfite	SM 4500-SO3 B	MISC12	12/05/06
Surfactants (Mbas)	SM 5540C	NIIA3	12/05/06

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Wednesday, March 11 2009

AZ License: AZ0003 **Lab Name: Aquatic Consulting & Testing, Inc.**

Program WW

Parameter	EPA Method	Billing Code	Cert Date
Temperature, Degrees Celcius	SM 2550B	NIA18	03/20/00
Thallium	EPA 200.7	MTL3	05/02/02
Thallium	EPA 200.9	MTL2	03/30/95
Thallium	EPA 279.2	MTL2	01/28/05
Tin	EPA 200.7	MTL3	12/09/94
Total Coliforms By Membrane Filter	SM 9222B	MIC2	03/15/96
Total Coliforms By Mtf	SM 9221B	MIC1	03/20/00
Total Organic Carbon	SM 5310B	MISC1	04/04/08
Total, Fixed And Volatile Solids In Sludge	SM 2540G	NIIA7	10/29/03
Toxicity	EPA/600/4-89/001	BIO	03/20/00
Toxicity, Acute	EPA 600/4-90-027F	BIO	06/05/03
Toxicity, Chronic	EPA 600/4-91/002	BIO	03/20/00
Toxicity, Chronic	EPA 821R-02-013	BIO	12/05/06
Turbidity	EPA 180.1	NIA9	12/09/94
Vanadium	EPA 200.7	MTL3	03/20/00
Zinc	EPA 200.7	MTL3	12/09/94

Total Licensed Parameters in this Program: 87

Instruments	Quantity	Date
INDUCTIVELY COUPLED PLASMA SPECTROMETER	1	12/09/94
MERCURY ANALYZER	1	03/11/09

Softwares
PERKIN ELMER - AA

Non-Transferable

STATE OF ARIZONA
Office Of Pest Management
9535 E. Doubletree Ranch Rd.
(602)255-3664
www.sb.state.az.us

Printed: 11/02/2009
Printed By: 3163

License No: 3163

Licensed Categories	Expires	Status
B9 - Aquatic Pest	12/31/2010	Active

Qualifying Party License

ISSUED TO:

1000007592
JANET WOOD SCHEFFMAN
1701 EAST YUKON DRIVE
PHOENIX AZ 85024

This license MUST be renewed by December 1 of each year, and shall expire on December 31 of each year.

Non-Transferable

STATE OF ARIZONA
Office Of Pest Management
9535 E. Doubletree Ranch Rd.
(602)255-3664
www.sb.state.az.us

Printed: 04/15/2009
Printed By: JEAN

License No: 950158

Licensed Categories	Expires	Status
B9 - Aquatic Pest	05/31/2010	Active

Pesticide Applicator License

ISSUED TO:

1000007592
JANET WOOD SCHEFFMAN
1701 EAST YUKON DRIVE
PHOENIX AZ 85024

This license MUST be renewed by May 1 of each year, and shall expire on May 31 of each year.

Janice K. Brewer
Governor

STATE OF ARIZONA
Office Of Pest Management
9535 E. Doubletree Ranch Rd.
(602)255-3664
www.sb.state.az.us

Ellis M. Jones
Acting Director

BUSINESS LICENSE

Non-Transferable

HURRICANE AQUATICS

Business License number: 5746

Has been licensed since 01/12/2001, and is authorized to provide pest management services in Arizona for the year 2010, as long as the business has a current and "valid" Active or Temporary Qualifying Party Licensee and the required financial responsibility, according to the Office Of Pest Management's laws and rules.

This license must be renewed by December 1st of each year, and expires on December 31st of each year. For any inquiries regarding this license please visit the Office Of Pest Management's website at www.sb.state.az.us or contact the Office Of Pest management.

Printed: 11/02/2009

Printed By: 5746

Form **W-9**
(Rev. October 2007)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give form to the requester. Do not send to the IRS.

Print or type See Specific Instructions on page 2.

Name (as shown on your income tax return)
Hurricane Aquatics, LLC

Business name, if different from above

Check appropriate box: ☐ Individual/Sole proprietor ☐ Corporation ☐ Partnership
☑ Limited liability company. Enter the tax classification (D=disregarded entity, C=corporation, P=partnership) ▶ .....
☐ Other (see instructions) ▶

☐ Exempt payee

Address (number, street, and apt. or suite no.)
1701 East Yukon Drive

Requester's name and address (optional)

City, state, and ZIP code
Phoenix, AZ 85024

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on Line 1 to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number
: :

or

Employer identification number
80 : 0139518

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the Certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Here Signature of U.S. person ▶ [signature] Date ▶ 03-30-10

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

The person who gives Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States is in the following cases:

- The U.S. owner of a disregarded entity and not the entity,

ACORD® CERTIFICATE OF LIABILITY INSURANCE

OP ID DR HURRI-1

DATE (MM/DD/YYYY) 12/30/09

PRODUCER
AMIS/Alliance Mktg. & Ins Serv
CA Surplus Line Lic # 0E25579
355 Via Vera Cruz #7
San Marcos CA 92078
Phone: 760-471-7116 Fax: 760-471-9378

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED

Hurricane Aquatics
19243 North 13Th Place
Phoenix AZ 85024

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: Scottsdale Indemnity	
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
A	X	GENERAL LIABILITY [X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC	CPI0021381	12/28/09	12/28/10	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
		AUTOMOBILE LIABILITY [ ] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] HIRED AUTOS [ ] NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ $ $ $
		GARAGE LIABILITY [ ] ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
		EXCESS / UMBRELLA LIABILITY [ ] OCCUR [ ] CLAIMS MADE [ ] DEDUCTIBLE [ ] RETENTION $				EACH OCCURRENCE AGGREGATE	$ $
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] (Mandatory In NH) If yes, describe under SPECIAL PROVISIONS below				WC STATU-TORY LIMITS [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ $ $
A		OTHER Wood Destroy Organ	CPI00213181	12/28/09	12/28/10		

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CITY OF TEMPE IS NAMED AS AN ADDITIONAL INSURED.

LAKE POND MGT & CONSULTING/SPRAYING-EXTERMINATOR-THIS POLICY CONFORMS TO STANDARDS SET FORTH IN AR322313(d)(e), ARIZONA

CERTIFICATE HOLDER

City of Tempe
City Tempe Procurement Office
20 E 6TH STREET
Tempe AZ 85281

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

ALLIANCE MGMNT & INS
PO BOX 849
SAN MARCOS, CA 92079

002951

PROGRESSIVE®

Named insured

HURRICANE AQUATICS
1701 E YUKON DRIVE
PHOENIX, AZ 85024

Policy number: 03276642-4
Underwritten by:
United Financial Casualty Company
October 20, 2009
Policy Period: Oct 27, 2009 - Oct 27, 2010

progressiveagent.com
Online Service
Make payments, check billing activity, print policy documents, or check the status of a claim.

760-471-7116
ALLIANCE MGMNT & INS
Contact your agent for personalized service.

800-444-4487
For customer service if your agent is unavailable or to report a claim.

Commercial Auto Insurance Coverage Summary

This is your Declarations Page
Your coverage has changed

Your coverage begins on October 27, 2009 at 12:01 a.m. This policy expires on October 27, 2010 at 12:01 a.m.

This coverage summary replaces your prior one. Your insurance policy and any policy endorsements contain a full explanation of your coverage. The policy limits shown for an auto may not be combined with the limits for the same coverage on another auto, unless the policy contract allows the stacking of limits. The policy contract is form 6912 (03/05). The contract is modified by forms Z435 (12/06), Z228 (07/05), 2852AZ (04/08), 4852AZ (02/05) and 4881AZ (02/05).

The named insured organization type is a corporation.

Policy changes effective October 27, 2009

Premium change:	$0.00
Changes:	The mailing address information has changed.

The changes shown above will not be effective prior to the time the changes were requested.

Outline of coverage

Description	Limits	Deductible	Premium
Liability To Others			$684
Bodily Injury Liability	$250,000 each person/$500,000 each accident		
Property Damage Liability	$100,000 each accident		
Uninsured Motorist	$250,000 each person/$500,000 each accident		125
Underinsured Motorist	Rejected		--
Comprehensive			138
See Auto Coverage Schedule	Limit of liability less deductible		
Collision			337
See Auto Coverage Schedule	Limit of liability less deductible		
Total 12 month policy premium			**$1,284**

Rated driver

1. JANET SCHEFFMAN

Auto coverage schedule

1. **2007 Ford F150**
VIN: 1FTPX02587KC78002

Stated Amount: $27,300
Garaging Zip Code: 85024 Radius: 50

	Liability	UM BI			
Liability Premium	$684	$125			
Physical Damage	**Comp Deductible**	**Comp Premium**	**Collision Deductible**	**Collision Premium**	**Auto Total**
Premium	$250	$138	$250	$337	**$1,284**

Premium discounts

Policy	
03276642-4	Business Experience, Package, Paid in Full and Renewal

Loss Payee information

1.	Loss Payee	Auto 1	FORD MOTOR CREDIT PO BOX 390910 MINNEAPOLIS, MN 55439 2007 Ford F150 (1FTPX02587KC78002)

Agent countersignature

Lori Combs

Company officers

Patricia M. Corum

Secretary

PPACS01Z 002951 001 * 001 001 0000000000000 3511000001543

ARIZONA DEPARTMENT OF REVENUE
LICENSE & REGISTRATION SECTION
1600 WEST MONROE
PHOENIX, ARIZONA 85007-2650

MUST BE
DISPLAYED IN A
CONSPICUOUS PLACE

TRANSACTION PRIVILEGE TAX LICENSE

-NOT TRANSFERABLE-

THIS LICENSE IS ISSUED TO THE BUSINESS NAMED BELOW FOR THE ADDRESS SHOWN. LICENSES, BY LAW, MAY NOT BE TRANSFERRED FROM ONE PERSON TO ANOTHER NOR CAN THEY BE TRANSFERRED FROM ONE LOCATION TO ANOTHER. ARIZONA LAW REQUIRES LICENSEES TO NOTIFY THE DEPARTMENT OF REVENUE IF THERE IS A CHANGE IN BUSINESS NAME, TRADE NAME, LOCATION, MAILING ADDRESS OR OWNERSHIP. IN ADDITION, WHEN BUSINESS IS DISCONTINUED OR BUSINESS LOCATION CHANGES AND A NEW LICENSE IS ISSUED, THIS LICENSE MUST BE RETURNED TO THE ARIZONA DEPARTMENT OF REVENUE. THE LICENSEE LISTED BELOW IS LICENSED TO CONDUCT BUSINESS UPON THE CONDITION THAT TAXES ARE PAID TO THE ARIZONA DEPARTMENT OF REVENUE AS ACCRUED UNDER PROVISIONS OF ARS TITLE 42, CHAPTER 5, ARTICLE 1.

ISSUED TO

SCHEFFMAN, JANET W
C/O HURRICANE AQUATICS
19243 N. 13TH PL
PHOENIX, AZ 85024

(DBA) HURRICANE AQUATICS
19243 N. 13TH PL
PHOENIX, AZ 85024

07-625216-D ← ALL communications and Reports MUST REFER to this LICENSE NO.

17 BUSINESS CODE

01/12/01 EFFECTIVE DATE

12/27/00 PRINT DATE

DOR 87026 (1/88)

Finance Department
Tax Division

LICENSE NO: 01002221
Business Class(es): 17, 29

City of Phoenix
PRIVILEGE (Sales) TAX LICENSE

The business or firm listed is hereby licensed to conduct business at the following location upon the condition that tax returns are filed and taxes remitted to the City of Phoenix as required under the provisions of Chapter 14 of the City Code.

Business name/address
HURRICANE AQUATICS
19243 N 13TH PL
PHOENIX AZ 85024-2354

This license expires on December 31st:
2010

Janet Wood Scheffman
1701 East Yukon Drive / Phoenix, AZ 85024
Office/Fax: (623) 516-8995 / Mobile: (602) 619-8492

EXPERIENCE:

1994 – Present: Aquatic Biologist: Aquagenix, and Aquatic Dynamics, Tempe Arizona. As of January, 2001 self employed as Hurricane Aquatics: Aquatic biologist duties include all aspects of maintenance of manmade lake and pond systems. Fieldwork includes identification and chemical control of algae, aquatic weeds, and aquatic insects; inspection of aeration, pumps and water delivery systems, scuba diving and on site water testing. Consulting work involves recommendations of fish stockings for biological control, use of bacteria and chemicals for lake maintenance, fish habitat placement and recommendations on lake design.

1993 - 1994: QC Chemist and microbiologist: Coco-Cola Enterprises, Tempe, AZ Responsibilities included the collection and reading of microbiological samples; and quality control analysis and monitoring of water supply, raw materials and final product.

1989 – 1993: Aquatic Biologist, Scientific Diver and Laboratory Chemist: Environmental Planning and Analysis. Tallahassee, FL. As field team leader duties included the collection and preservation of biological, chemical and geological field samples; operation of offshore boats, use of GPS navigation systems, and collection of field data. Lab duties included analysis of water, wastewater and sediment samples for various chemical and physical parameters.

1986 – 1989: United States Army Military Police Corps, 1st Armored Division, Ansbach West Germany. Honorable Discharge

1981 – 1986: Assistant Manager in restaurants through high school and university. Mechanicsville, VA and Coral Gables, FL.

EDUCATION:

1981 – 1985:	University of Miami: Bachelors degree in Marine Science and minor in Economics
1980:	SCUBA certification / over 2000 hours underwater
1993:	Structural pest control certification for the state of Arizona

PERSONAL DATA / ACTIVITIES /AWARDS

DOB: 09 June 1963
Awarded Army Commendation Medal and three Certificates of Achievement
Travel to over 30 countries in Europe and the Mediterranean

EXPERIENCE AND QUALIFICATIONS OF KEY PERSONNEL

The following personnel, all with over 10 years experience, are anticipated to play key roles. A brief description of their experience and qualifications are presented in the table below. The entire staff will be available for support on an as-needed basis.

Personnel (years with firm)	Qualifications
Frederick A. Amalfi, Ph.D. (21 yrs)	• Ph.D. Limnology • Certified Lake Manager • 32 years water quality sampling and testing
Christopher C. Christian (18 yrs)	• B.S. Chemistry • Former Grade 2 drinking water and wastewater treatment and operator • 22 years analytical laboratory • field & laboratory management • autosampler installation and operations
Elizabeth M. Atkinson (21 yrs)	• B.S. Biology • 20 years wastewater microbiology & toxicity testing
Sharon L. Murrey (15 yrs)	• B.S. Environmental Resources • A.A. Agronomy • 22 years soil and water chemical analysis
Douglas D. Crowl (13 yrs)	• B.S. Biology • Grade 4 water treatment operator • 12 years water sampling and field testing
Mark E. Whitney (10 yrs)	• B.S. Microbiology • 10 years microbiological analysis • microbiological species • identification • pathogen & mutagen identification

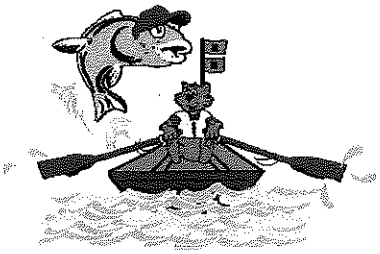
LICENSE

AC&T is licensed by the Arizona Department of Health Services to provide drinking water, wastewater, and surface water testing and complies with all regulations pertaining to laboratory operations and testing. A copy of the license is included in the Appendix.

INSURANCE

AC&T maintains the following insurances. Original certificates naming the City of Douglas as an Additional Insured will be provided upon award of contract and before work commences. Specimen copies of current insurance are included for documentation in the Appendix.

General/professional	$2M
Worker's Compensation	$1M
Automobile	$2M



HURRICANE AQUATICS

1701 EAST YUKON DRIVE PHOENIX, AZ 85024
PHONE (602) 619-8492 / FAX (623) 516-8995
1 5746 E-1

City of Tempe Park Lakes Dissolved Oxygen Readings:

⇒ Kiwanis Park: 03-02-2010 / 1530 hours

Surface readings:	**Bottom readings:**
Temperature: 17.8 C	17.4 C
Dissolved Oxygen: 7.69 mg/L	7.37 mg/L
% saturation: 81%	77%
Salinity: 0.4 ppt	0.4 ppt

⇒ Ken McDonald Golf Course: 03-02-2010 / 1545 hours

Surface readings:	**Bottom readings:**
Temperature: 18.0 C	17.7 C
Dissolved Oxygen: 7.85 mg/L	6.98 mg/L
% saturation: 83%	72%
Salinity: 0.6 ppt	0.6 ppt

⇒ Selleh Park: 03 -02-2010 / 1600 hours

Surface Readings:	**Bottom readings:**
Temperature: 20.5 C	20.0 C
Dissolved Oxygen: 7.65 mg/L	7.17 mg/L
% saturation: 85%	79%
Salinity: 0.3 ppt	0.3 ppt

⇒ Papago Park: 03-02-2010 / 1615 hours

Surface readings:	**Bottom readings:**
Temperature: 18.3 C	17.9 C
Dissolved Oxygen: 7.60 mg/L	7.02 mg/L
% saturation: 81%	74%
Salinity: 0.4 ppt	0.4 ppt

⇒ Canal Park: 03-02 -2010 / 1630 hours

Surface readings:	**Bottom readings:**
Temperature: 18.5 C	18.0 C
Dissolved Oxygen: 8.27mg/L	7.56 mg/L
% saturation: 88%	80%
Salinity: 0.3 ppt	0.3 ppt

Monthly samples were pulled on 03-02-2010

HURRICANE AQUATICS

1701 EAST YUKON DRIVE PHOENIX, AZ 85024
PHONE (602) 619-8492 / FAX (623) 516-8995
I 5746 E-1

TO: **Jeff Carroll**
FROM: **Janet Scheffman / 950158**
FAX NUMBER: **(480) 350 – 5058**
DATE: **Week of March 8th, 2010**

Inspection / observation field sheet for City of Tempe Lakes

Kiwanis Park:

Aquatic Weeds: No rooted aquatic plants or any surface fragments seen but with spring temps we could get some aquatic weeds in the upcoming weeks.

Algae: The recent increased turbidity and the cloudy conditions of the last several weeks and earlier this week has slowed any recent algae growth. The clarity levels are back to normal but there was little increase in bottom growth seen. There is a growth of filamentous algae around most of the perimeter but it remains less than a few inches wide. The filamentous growth on the bottom rocks in the shallow areas remains in check, the growth is not near the surface so no treatments are needed.

Water clarity: Visibility remains normal at 38 inches and the suspended solids have settled out and the coloration was back to normal despite the rain earlier in the week.

Treatments: None

Additional info: Water levels were close to full from the rain over the weekend and early in the week but the lake was not flooded. I did not see any midges this week because of the cooler, rainy weather but they will be more evident when the weather clears. If we get an infestation I will treat with larvicide but the fish have been effective in the past at consuming most of the midge larvae and pupa. Many of the seasonal waterfowl will be leaving in the next month and after that we can determine if there are too many permanent waterfowl and arrange to the waterfowl relocated.

Weekly water samples were pulled from all lakes on March 9th, 2010

Inspection / observation field sheet for City of Tempe Lakes (2/3) Week of March 8th, 2010

Selleh Park:

Aquatic Weeds: No rooted plants or weed fragments seen and still no indications of any plants in the deeper sections of the lake.

Algae: The growth of filamentous algae seen on the perimeter rocks is gone. The lake still remains turbid and that slowed planktonic and bottom algae growth but with spring temps and longer days here we will get increased algae growth in the next few weeks.

Water clarity: The lake clarity remain lower than normal at 24 inches again this week and there were still suspended solids in the water column but no appreciable change since last week even after the last storm.

Treatments: None

Additional Information: Water levels were higher this week again (to the top of the rocks) after yet more rain in the early week. No midge flies seen in or around the lake.

Papago Park:

Aquatic Weeds: No weeds were seen on the lake bottom and there have been no widgeon grass fragments for months. The cattails in the stream remain largely brown and dormant but will start to grow in the next few weeks.

Algae: There was no appreciable algae growth in the water column again this week as the temps remain cool. I have seen a small increase in bottom algae growth around the perimeter as the water clears and there is more sunlight but none is floating to the surface.

Water clarity: Visibility was lower again this week and the water remained muddy and turbid after the last storm. With clearer weather in the forecast most of the suspended solids will start to settle out and visibility increase over time.

Treatments: No chemical treatments needed

Additional information: The lake levels were full early in the week. I am seeing a very small amount of adult midges around the lake but not enough for chemical treatments yet and the fish populations may keep the amount of larvae in check.

Inspection / observation field sheets for City of Tempe Lakes (3/3) Week of March 8th, 2010

Canal Park:

Aquatic Weeds: No floating aquatic weeds or weed fragments seen on the surface or on the lake bottom. I am leaving all the stands of cattails alone for now but with the spring weather here they will green up soon and will remove any new growth while the plants are very small.

Algae: The small amount of filamentous algae around the perimeter is gone after the cooler and cloudy conditions of the past month. Turbidity and water levels remain the same this week but there was no appreciable bottom algae growth in the canal or algae in the water column.

Water clarity: Clarity remains 30 inches in the main section of lake and there are still more suspended solids in the water column than usual from storm water runoff but the marked brown tint is gone and the most recent rain has no affect on visibility.

Treatments: None

Additional Information: I would like to have the large tree that is encroaching into the lake at the end of the canal area (adjacent to the main lake) and the large tree branch in the canal area removed because algae and trash accumulate there in the warmer months. There were only a very few midges seen around the lake and no treatments needed.

Ken McDonald Golf Course:

Aquatic Weeds: No rooted weeds or weed fragments seen in any lakes and no cattail growth around the lakes.

Algae: The recent spot algaecide treatments and the cooler, rainy weather has slowed algae growth but with forecasted highs over 80 next week we will see a marked increase in algae in the spring. The north lakes tend to get filamentous growth and the south lakes get planktonic growth in the water column.

Clarity: The average visibility remains 30 inches in the north lakes and increased to 30 inches in the south lakes after the algaecide treatments. The heavy rainfall caused no appreciable increase in turbidity and helped to retard algae.

Treatments: None

Additional Information: I am seeing a very few midge flies around the lakes but the numbers remain limited and we can wait and see if the goldfish are effective in consuming the algae or if treatments are needed.

AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (480) 921-8044 • FAX: (480) 921-0049

Lic. No. AZ0003

LABORATORY REPORT

Client: Hurricane Aquatics
1701 East Yukon Drive
Phoenix, AZ 85024

Date Submitted: 04/28/09
Date Reported: 05/11/09

Attn: Janet Scheffman

Project: Weekly

RESULTS

Client ID: Canal
ACT Lab No.: BR04499

Sample Type: Surface Water
Sample Time: 04/28/09 16:15

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Alkalinity, Total	05/06/09	05/06/09	SM 2320 B	128.	mg/L as CaCO3
Copper, Dissolved	05/05/09	05/05/09	200.7/6010B	<0.01	mg/L
pH	04/28/09	04/28/09	SM4500H+ B	8.4@14C	SU

Client ID: Papago
ACT Lab No.: BR04500

Sample Type: Surface Water
Sample Time: 04/28/09 16:00

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Alkalinity, Total	05/06/09	05/06/09	SM 2320 B	154.	mg/L as CaCO3
Copper, Dissolved	05/05/09	05/05/09	200.7/6010B	<0.01	mg/L
pH	04/28/09	04/28/09	SM4500H+ B	8.0@14C	SU

Client ID: Sellah
ACT Lab No.: BR04501

Sample Type: Surface Water
Sample Time: 04/28/09 15:45

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Alkalinity, Total	05/06/09	05/06/09	SM 2320 B	148.	mg/L as CaCO3
Copper, Dissolved	05/05/09	05/05/09	200.7/6010B	<0.01	mg/L
pH	04/28/09	04/28/09	SM4500H+ B	8.5@13C	SU

RESULTS

Client ID: Kiwanis
ACT Lab No.: BR04342

Sample Type: Surface Water
Sample Time: 04/21/09 15:00

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Alkalinity, Total	04/23/09	04/23/09	SM 2320 B	128.	mg/L as CaCO3
Copper, Dissolved	05/05/09	05/05/09	200.7/6010B	<0.01	mg/L
pH	04/21/09	04/21/09	SM4500H+ B	8.8@13C	SU

Client ID: K. McDonald
ACT Lab No.: BR04343

Sample Type: Surface Water
Sample Time: 04/21/09 15:15

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Alkalinity, Total	04/23/09	04/23/09	SM 2320 B	136.	mg/L as CaCO3
Copper, Dissolved	05/05/09	05/05/09	200.7/6010B	<0.01	mg/L
pH	04/21/09	04/21/09	SM4500H+ B	9.8@13C	SU

Reviewed by: _____

Frederick A. Amalfi, Ph.D.
Laboratory Director

AQUATIC CONSULTING & TESTING, INC.

1525 W. University Drive, Suite 106
P.O. Box 1510
Tempe, Arizona 85281
Phone: (480) 921-8044 • FAX: (480) 921-0049

Lic. No. AZ0003

LABORATORY REPORT

Client: Hurricane Aquatics
1701 East Yukon Drive
Phoenix, AZ 85024

Attn: Janet Scheffman

Date Submitted: 04/07/09
Date Reported: 05/01/09

Project: Monthly

RESULTS

Client ID: Canal
ACT Lab No.: BR03792

Sample Type: Surface Water
Sample Time: 04/07/09 15:45

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Identification	04/29/09	04/29/09		See Attached	
Alkalinity, Total	04/15/09	04/15/09	SM 2320 B	140.	mg/L as CaCO3
Ammonia - N	04/09/09	04/09/09	SM4500NH3 D	0.05	mg/L as N
Nitrate + Nitrite - N	04/17/09	04/17/09	SM4500NO3 E	0.01	mg/L as N
Phosphorus, Total	04/16/09	04/16/09	365.3	0.151	mg/L as P
Total Hardness	04/08/09	04/08/09	SM2340C	168.	mg/L as CaCO3
Total Kjeldahl Nitrogen	04/08/09	04/08/09	SM4500-Norg C	0.5	mg/L as N
Copper, Dissolved	04/17/09	04/17/09	200.7/6010B	<0.01	mg/L
pH	04/07/09	04/07/09	SM4500H+ B	7.9@14C	SU

RESULTS

Client ID: Papago
ACT Lab No.: BR03793

Sample Type: Surface Water
Sample Time: 04/07/09 15:30

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Identification	04/29/09	04/29/09		See Attached	
Alkalinity, Total	04/15/09	04/15/09	SM 2320 B	146.	mg/L as CaCO3
Ammonia - N	04/09/09	04/09/09	SM4500NH3 D	0.04	mg/L as N
Nitrate + Nitrite - N	04/17/09	04/17/09	SM4500NO3 E	0.02	mg/L as N
Phosphorus, Total	04/16/09	04/16/09	365.3	0.058	mg/L as P
Total Hardness	04/08/09	04/08/09	SM2340C	234.	mg/L as CaCO3
Total Kjeldahl Nitrogen	04/08/09	04/08/09	SM4500-Norg C	0.3	mg/L as N
Copper, Dissolved	04/17/09	04/17/09	200.7/6010B	<0.01	mg/L
pH	04/07/09	04/07/09	SM4500H+ B	7.7@12C	SU

Client ID: Sellah
ACT Lab No.: BR03794

Sample Type: Surface Water
Sample Time: 04/07/09 15:15

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Identification	04/29/09	04/29/09		See Attached	
Alkalinity, Total	04/15/09	04/15/09	SM 2320 B	130.	mg/L as CaCO3
Ammonia - N	04/09/09	04/09/09	SM4500NH3 D	0.04	mg/L as N
Nitrate + Nitrite - N	04/17/09	04/17/09	SM4500NO3 E	0.03	mg/L as N
Phosphorus, Total	04/16/09	04/16/09	365.3	0.069	mg/L as P
Total Hardness	04/08/09	04/08/09	SM2340C	164.	mg/L as CaCO3
Total Kjeldahl Nitrogen	04/15/09	04/15/09	SM4500-Norg C	0.4	mg/L as N
Copper, Dissolved	04/17/09	04/17/09	200.7/6010B	<0.01	mg/L
pH	04/07/09	04/07/09	SM4500H+ B	8.5@10C	SU

RESULTS

Client ID: Kiwanis
ACT Lab No.: BR03795

Sample Type: Surface Water
Sample Time: 04/07/09 14:45

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Identification	04/29/09	04/29/09		See Attached	
Alkalinity, Total	04/15/09	04/15/09	SM 2320 B	124.	mg/L as CaCO3
Ammonia - N	04/09/09	04/09/09	SM4500NH3 D	0.53	mg/L as N
Nitrate + Nitrite - N	04/17/09	04/17/09	SM4500NO3 E	0.02	mg/L as N
Phosphorus, Total	04/16/09	04/16/09	365.3	0.097	mg/L as P
Total Hardness	04/08/09	04/08/09	SM2340C	152.	mg/L as CaCO3
Total Kjeldahl Nitrogen	04/15/09	04/15/09	SM4500-Norg C	0.8	mg/L as N
Copper, Dissolved	04/17/09	04/17/09	200.7/6010B	<0.01	mg/L
pH	04/07/09	04/07/09	SM4500H+ B	8.9@10C	SU

Client ID: K. McDonald
ACT Lab No.: BR03796

Sample Type: Surface Water
Sample Time: 04/07/09 15:00

Parameter	Analysis Date Start	Analysis Date End	Method No.	Result	Unit
Algae Identification	04/29/09	04/29/09		See Attached	
Alkalinity, Total	04/15/09	04/15/09	SM 2320 B	168.	mg/L as CaCO3
Ammonia - N	04/09/09	04/09/09	SM4500NH3 D	0.06	mg/L as N
Nitrate + Nitrite - N	04/17/09	04/17/09	SM4500NO3 E	0.02	mg/L as N
Phosphorus, Total	04/16/09	04/16/09	365.3	0.657	mg/L as P
Total Hardness	04/08/09	04/08/09	SM2340C	266.	mg/L as CaCO3
Total Kjeldahl Nitrogen	04/15/09	04/15/09	SM4500-Norg C	1.5	mg/L as N
Copper, Dissolved	04/17/09	04/17/09	200.7/6010B	<0.01	mg/L
pH	04/07/09	04/07/09	SM4500H+ B	9.9@9C	SU

Reviewed by: _____

Frederick A. Amalfi, Ph.D.
Laboratory Director

ALGAE IDENTIFICATION

AC&T Lab No.	BR03794	Date Collected	04/07/09
Client I.D.	Sellah	Collected By	Client

Divisions: bac=Bacillariophyta; chl=Chlorophyta; cry=Chrysophyta; cyn=Cyanophyta; eug=Euglenophyta; hap=Haptophyta; pyr=Pyrrhophyta Forms: u=unicell; c=colony; f=filament; g= flagellate

Genus	Div.-Form	Rel. Count	Total per mL	Comp.	Genus	Div.-Form	Rel. Count	Total per mL.	Comp
Achnanthes	bac-u				*Microcystis*	cyn-c			
Anabaena	cyn-f				*Microspora*	chl-f			
Ankistrodesmus	chl-u				*Mougeotia*	chl-f			
Aphanocapsa	cyn-c				***Navicula***	bac-u	4	76	6.06%
Asterionella	bac-c				*Nitzschia*	bac-u			
Botryococcus	chl-c				*Opephora*	bac-u			
Carteria	chl-ug	1	19	1.52%	*Oscillatoria*	cyn-f			
Cephalomonas	chl-ug				*Pandorina*	chl-cg			
Ceratium	pyr-ug				***Pediastrum***	chl-c	40	760	60.61%
Chlamydomonas	chl-ug	2	38	3.03%	*Peridinium*	pyr-ug			
Chlorella	chl-u				*Phacotus*	chl-ug			
Chlorococcum	chl-c				*Phacus*	chl-ug			
Chroococcus	cyn-c				*Pinnularia*	bac-u			
Cladophora	chl-f				*Pithophora*	chl-f			
Closterium	chl-u	1	19	1.52%	*Planktosphaeria*	chl-c			
Cocconeis	bac-u	1	19	1.52%	*Rhizoclonium*	chl-f			
Coelastrum	chl-c				*Rhoicosphenia*	bac-u			
Cosmarium	chl-u				*Rhopalodia*	bac-u			
Cosmocladium	chl-c				***Scenedesmus***	chl-c	12	228	18.18%
Chilomonas	crp-ug				*Scytonema*	chl-f			
Cryptomonas	crp-ug				*Selanastrum*	chl-u			
Cyclotella	bac-u	1	19	1.52%	*Sphaerocystis*	chl-c			
Cymbella	bac-u				*Spondylumorum*	chl-c			
Diatoma	bac-u				*Spirulina*	cyn-f			
Dinobryon	bac-c				***Staurastrum***	chl-u	2	38	3.03%
Dunaliella	chl-u				*Stephanodiscus*	bac-u			
Epithemia	bac-u				*Stigeoclonium*	chl-f			
Euglena	eug-ug				*Surirella*	bac-u			
Fragilaria	bac-u				*Synechococcus*	cyn-u			
Frustulia	bac-u				*Synechocystis*	cyn-c			
Glenodinium	pyr-ug				***Synedra***	bac-u	2	38	3.03%
Golenkinia	chl-c				*Synura*	cry-cg			
Gomphonema	bac-u				*Tetraedron*	chl-c			
Gonium	chl-cg				*Tetrastrum*	chl-c			
Gonyaulax	pyr-ug				*Trachelomonas*	eug-ug			
Gyrosigma	bac-u				*Vaucheria*	chl-f			
Hydrodictyon	chl-c				*Volvox*	chl-cg			
Lyngbya	cyn-f				*Zygnema*	chl-f			
Melosira	bac-f								
Meridion	bac-u								
Micrasterias	chl-u								

check 100.00%

Aquatic Consulting & Testing, Inc.
1525 W. University Dr., Suite 106
Tempe, Arizona 85281

Count (units/mL) 1.25E+03

ALGAE IDENTIFICATION

AC&T Lab No.	BR03793	Date Collected	04/07/09
Client I.D.	Papago	Collected By	Client

Divisions: bac=Bacillariophyta; chl=Chlorophyta; cry=Chrysophyta; cyn=Cyanophyta; eug=Euglenophyta; hap=Haptophyta; pyr=Pyrrhophyta Forms: u=unicell; c=colony; f=filament; g= flagellate

Genus	Div.-Form	Rel. Count	Total per mL	Comp.	Genus	Div.-Form	Rel. Count	Total per mL.	Comp
Achnanthes	bac-u				*Microcystis*	cyn-c			
Anabaena	cyn-f				*Microspora*	chl-f			
Ankistrodesmus	chl-u				*Mougeotia*	chl-f			
Aphanocapsa	cyn-c				***Navicula***	bac-u	2	38	2.11%
Asterionella	bac-c				*Nitzschia*	bac-u			
Botryococcus	chl-c				*Opephora*	bac-u			
Carteria	chl-ug				*Oscillatoria*	cyn-f			
Cephalomonas	chl-ug				*Pandorina*	chl-cg			
Characium	chl-u	1	19	1.05%	*Pediastrum*	chl-c			
Chlamydomonas	chl-ug				*Peridinium*	pyr-ug			
Chlorella	chl-u				*Phacotus*	chl-ug			
Chlorococcum	chl-c				*Phacus*	chl-ug			
Chroococcus	cyn-c				*Pinnularia*	bac-u			
Chroomonas	crp-ug	40	760	42.11%	*Pithophora*	chl-f			
Closterium	chl-u	1	19	1.05%	*Planktosphaeria*	chl-c			
Cocconeis	bac-u				*Rhizoclonium*	chl-f			
Coelastrum	chl-c				***Rhoicosphenia***	bac-u	1	19	1.05%
Cosmarium	chl-u				*Rhopalodia*	bac-u			
Cosmocladium	chl-c				*Scenedesmus*	chl-c			
Chilomonas	crp-ug				*Scytonema*	chl-f			
Cryptomonas	crp-ug	1	19	1.05%	*Selanastrum*	chl-u			
Cyclotella	bac-u				*Sphaerocystis*	chl-c			
Cymbella	bac-u				*Spondylumorum*	chl-c			
Diatoma	bac-u				*Spirulina*	cyn-f			
Dinobryon	bac-c				*Stauroneis*	bac-u			
Dunaliella	chl-u				*Stephanodiscus*	bac-u			
Epithemia	bac-u				*Stigeoclonium*	chl-f			
Euglena	eug-ug				*Surirella*	bac-u			
Fragilaria	bac-u				*Synechococcus*	cyn-u			
Frustulia	bac-u				*Synechocystis*	cyn-c			
Glenodinium	pyr-ug				***Synedra***	bac-u	1	19	1.05%
Golenkinia	chl-c				*Synura*	cry-cg			
Gomphonema	bac-u				*Tetraedron*	chl-c			
Gonium	chl-cg				*Tetrastrum*	chl-c			
Gonyaulax	pyr-ug				*Trachelomonas*	eug-ug			
Gyrosigma	bac-u				*Vaucheria*	chl-f			
Hydrodictyon	chl-c				*Volvox*	chl-cg			
Lyngbya	cyn-f				*Zygnema*	chl-f			
Melosira	bac-f	48	912	50.53%					
Meridion	bac-u								
Micrasterias	chl-u								

check 100.00%

Aquatic Consulting & Testing, Inc.
1525 W. University Dr., Suite 106
Tempe, Arizona 85281

Count (units/mL) 1.81E+03

ALGAE IDENTIFICATION

AC&T Lab No.	BR03792	Date Collected	04/07/09
Client I.D.	Canal	Collected By	Client

Divisions: bac=Bacillariophyta; chl=Chlorophyta; cry=Chrysophyta; cyn=Cyanophyta; eug=Euglenophyta; hap=Haptophyta; pyr=Pyrrhophyta Forms: u=unicell; c=colony; f=filament; g= flagellate

Genus	Div.-Form	Rel. Count	Total per mL	Comp.	Genus	Div.-Form	Rel. Count	Total per mL.	Comp
Achnanthes	bac-u				*Microcystis*	cyn-c			
Anabaena	cyn-f				*Microspora*	chl-f			
Ankistrodesmus	chl-u				*Mougeotia*	chl-f			
Aphanocapsa	cyn-c				*Navicula*	bac-u			
Asterionella	bac-c				*Nitzschia*	bac-u			
Botryococcus	chl-c				*Opephora*	bac-u			
Carteria	chl-ug				*Oscillatoria*	cyn-f			
Cephalomonas	chl-ug				*Pandorina*	chl-cg			
Ceratium	pyr-ug				***Pediastrum***	chl-c	8	152	38.10%
Chlamydomonas	chl-ug	1	19	4.76%	***Peridinium***	pyr-ug	2	38	9.52%
Chlorella	chl-u	2	38	9.52%	*Phacotus*	chl-ug			
Chlorococcum	chl-c				*Phacus*	chl-ug			
Chroococcus	cyn-c				*Pinnularia*	bac-u			
Cladophora	chl-f				*Pithophora*	chl-f			
Closterium	chl-u				*Planktosphaeria*	chl-c			
Cocconeis	bac-u				*Rhizoclonium*	chl-f			
Coelastrum	chl-c				*Rhoicosphenia*	bac-u			
Cosmarium	chl-u				*Rhopalodia*	bac-u			
Cosmocladium	chl-c				***Scenedesmus***	chl-c	6	114	28.57%
Chilomonas	crp-ug				*Scytonema*	chl-f			
Cryptomonas	crp-ug				*Selanastrum*	chl-u			
Cyclotella	bac-u				*Sphaerocystis*	chl-c			
Cymbella	bac-u				*Spondylumorum*	chl-c			
Diatoma	bac-u				*Spirulina*	cyn-f			
Dinobryon	bac-c				*Stauroneis*	bac-u			
Dunaliella	chl-u				*Stephanodiscus*	bac-u			
Epithemia	bac-u				*Stigeoclonium*	chl-f			
Euglena	eug-ug				*Surirella*	bac-u			
Fragilaria	bac-u				*Synechococcus*	cyn-u			
Frustulia	bac-u				*Synechocystis*	cyn-c			
Glenodinium	pyr-ug				***Synedra***	bac-u	1	19	4.76%
Golenkinia	chl-c				*Synura*	cry-cg			
Gomphonema	bac-u				***Tetraedron***	chl-c	1	19	4.76%
Gonium	chl-cg				*Tetrastrum*	chl-c			
Gonyaulax	pyr-ug				*Trachelomonas*	eug-ug			
Gyrosigma	bac-u				*Vaucheria*	chl-f			
Hydrodictyon	chl-c				*Volvox*	chl-cg			
Lyngbya	cyn-f				*Zygnema*	chl-f			
Melosira	bac-f								
Meridion	bac-u								
Micrasterias	chl-u								

check 100.00%

Aquatic Consulting & Testing, Inc.
1525 W. University Dr., Suite 106
Tempe, Arizona 85281

Count (units/mL) 3.99E+02

ALGAE IDENTIFICATION

AC&T Lab No.	BR03795	Date Collected	04/07/09
Client I.D.	Kiwanis	Collected By	Client

Divisions: bac=Bacillariophyta; chl=Chlorophyta; cry=Chrysophyta; cyn=Cyanophyta; eug=Euglenophyta; hap=Haptophyta; pyr=Pyrrhophyta Forms: u=unicell; c=colony; f=filament; g= flagellate

Genus	Div.-Form	Rel. Count	Total per mL	Comp.	Genus	Div.-Form	Rel. Count	Total per mL.	Comp
Achnanthes	bac-u				*Microcystis*	cyn-c			
Anabaena	cyn-f				*Microspora*	chl-f			
Ankistrodesmus	chl-u				*Mougeotia*	chl-f			
Aphanocapsa	cyn-c				***Navicula***	bac-u	3	2166	0.84%
Asterionella	bac-c				*Nitzschia*	bac-u			
Botryococcus	chl-c				*Opephora*	bac-u			
Carteria	chl-ug				*Oscillatoria*	cyn-f			
Cephalomonas	chl-ug				*Pandorina*	chl-cg			
Ceratium	pyr-ug				*Pediastrum*	chl-c			
Chlamydomonas	chl-ug				***Peridinium***	pyr-ug	1	722	0.28%
Chlorella	chl-u				*Phacotus*	chl-ug			
Chlorococcum	chl-c				***Phacus***	chl-ug	1	722	0.28%
Chroococcus	cyn-c				*Pinnularia*	bac-u			
Cladophora	chl-f				*Pithophora*	chl-f			
Closterium	chl-u	1	722	0.28%	*Planktosphaeria*	chl-c			
Cocconeis	bac-u				*Rhizoclonium*	chl-f			
Coelastrum	chl-c	336	242592	93.85%	*Rhoicosphenia*	bac-u			
Cosmarium	chl-u				*Rhopalodia*	bac-u			
Cosmocladium	chl-c				***Scenedesmus***	chl-c	10	7220	2.79%
Chilomonas	crp-ug				*Scytonema*	chl-f			
Cryptomonas	crp-ug				*Selanastrum*	chl-u			
Cyclotella	bac-u				*Sphaerocystis*	chl-c			
Cymbella	bac-u				*Spondylumorum*	chl-c			
Diatoma	bac-u				*Spirulina*	cyn-f			
Dinobryon	bac-c				*Stauroneis*	bac-u			
Dunaliella	chl-u				*Stephanodiscus*	bac-u			
Epithemia	bac-u				*Stigeoclonium*	chl-f			
Euglena	eug-ug	2	1444	0.56%	*Surirella*	bac-u			
Fragilaria	bac-u				*Synechococcus*	cyn-u			
Frustulia	bac-u				*Synechocystis*	cyn-c			
Glenodinium	pyr-ug				***Synedra***	bac-u	4	2888	1.12%
Golenkinia	chl-c				*Synura*	cry-cg			
Gomphonema	bac-u				*Tetraedron*	chl-c			
Gonium	chl-cg				*Tetrastrum*	chl-c			
Gonyaulax	pyr-ug				*Trachelomonas*	eug-ug			
Gyrosigma	bac-u				*Vaucheria*	chl-f			
Hydrodictyon	chl-c				*Volvox*	chl-cg			
Lyngbya	cyn-f				*Zygnema*	chl-f			
Melosira	bac-f								
Meridion	bac-u								
Micrasterias	chl-u								

check 100.00%

Aquatic Consulting & Testing, Inc.
1525 W. University Dr., Suite 106
Tempe, Arizona 85281

Count (units/mL) 2.58E+05

ALGAE IDENTIFICATION

AC&T Lab No.	BR03796	Date Collected	04/07/09
Client I.D.	Ken McDonald	Collected By	Client

Divisions: bac=Bacillariophyta; chl=Chlorophyta; cry=Chrysophyta; cyn=Cyanophyta; eug=Euglenophyta; hap=Haptophyta; pyr=Pyrrhophyta Forms: u=unicell; c=colony; f=filament; g= flagellate

Genus	Div.-Form	Rel. Count	Total per mL	Comp.	Genus	Div.-Form	Rel. Count	Total per mL.	Comp
Achnanthes	bac-u				*Microcystis*	cyn-c			
Anabaena	cyn-f				*Microspora*	chl-f			
Ankistrodesmus	chl-u				*Mougeotia*	chl-f			
Aphanocapsa	cyn-c				***Navicula***	bac-u	2	1444	0.98%
Asterionella	bac-c				*Nitzschia*	bac-u			
Botryococcus	chl-c				*Opephora*	bac-u			
Carteria	chl-ug				*Oscillatoria*	cyn-f			
Cephalomonas	chl-ug				*Pandorina*	chl-cg			
Ceratium	pyr-ug				***Pediastrum***	chl-c	50	36100	24.51%
Chlamydomonas	chl-ug	35	25270	17.16%	*Peridinium*	pyr-ug			
Chlorella	chl-u				*Phacotus*	chl-ug			
Chlorococcum	chl-c				*Phacus*	chl-ug			
Chroococcus	cyn-c				*Pinnularia*	bac-u			
Cladophora	chl-f				*Pithophora*	chl-f			
Closterium	chl-u				*Planktosphaeria*	chl-c			
Cocconeis	bac-u				*Rhizoclonium*	chl-f			
Coelastrum	chl-c				*Rhoicosphenia*	bac-u			
Cosmarium	chl-u				*Rhopalodia*	bac-u			
Cosmocladium	chl-c				***Scenedesmus***	chl-c	40	28880	19.61%
Chilomonas	crp-ug				*Scytonema*	chl-f			
Cryptomonas	crp-ug				*Selanastrum*	chl-u			
Cyclotella	bac-u	9	6498	4.41%	*Sphaerocystis*	chl-c			
Cymbella	bac-u				*Spondylumorum*	chl-c			
Diatoma	bac-u				*Spirulina*	cyn-f			
Dinobryon	bac-c				*Stauroneis*	bac-u			
Dunaliella	chl-u				*Stephanodiscus*	bac-u			
Epithemia	bac-u				*Stigeoclonium*	chl-f			
Euglena	eug-ug				*Surirella*	bac-u			
Fragilaria	bac-u				*Synechococcus*	cyn-u			
Frustulia	bac-u				*Synechocystis*	cyn-c			
Glenodinium	pyr-ug				*Synedra*	bac-u			
Golenkinia	chl-c	4	2888	1.96%	*Synura*	cry-cg			
Gomphonema	bac-u				*Tetraedron*	chl-c			
Gonium	chl-cg				*Tetrastrum*	chl-c			
Gonyaulax	pyr-ug				*Trachelomonas*	eug-ug			
Gyrosigma	bac-u				*Vaucheria*	chl-f			
Hydrodictyon	chl-c				*Volvox*	chl-cg			
Lyngbya	cyn-f				*Zygnema*	chl-f			
Melosira	bac-f								
Meridion	bac-u								
Merismopedia	cyn-c	64	46208	31.37%					

check 100.00%

Aquatic Consulting & Testing, Inc.
1525 W. University Dr., Suite 106
Tempe, Arizona 85281

Count (units/mL) 1.47E+05

HURRICANE AQUATICS

1701 EAST YUKON DRIVE PHOENIX, AZ 85024
PHONE (602) 619-8492 / FAX (623) 516-8995
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City of Tempe Lake Maintenance Proposal Questionnaire Responses:

1. Methodology for lake and fish maintenance:

I have been maintaining the City of Tempe's lake for 10 years and have an understanding for the water quality issues that affect these lakes. I am onsite a minimum of once a week and usually twice a week checking the water quality of each lake, looking for any structural issues, checking the condition of the fish population and taking water samples for lab testing. Because I am onsite frequently I see water quality issues such as algae growth and treat immediately. I carry whatever chemicals that may needed for chemical applications in my truck and by treating early the treatments have increased efficacy and also more cost effective.

2. **Knowledge of lake and fish maintenance as it pertains to the City lakes:**

In addition to maintaining the City of Tempe lakes for 10 years I have used Fresh Catch Fish for all of the fish stocking and because of that I have an extensive fish history (the number and species added to each lake). Over the course of the year Pat Church and I discuss the lakes and water quality issues and every year we prepare a comprehensive fish stocking proposal for each lake. The fish recommended are based on past stocking history, current water quality issues (such as algae and weed growth and midge fly issues) and budget issues. The use of fish in the lakes is much more cost effective than chemical treatments in the long and short term. I am very well versed with the golden algae issue that has killed many 1000s of fish in valley lakes since 2005 and I know what behaviors of the fish population are indicative of an outbreak. If I suspect golden algae I will take a sample for immediate testing and then contract the Parks Dept to arrange the necessary chemical treatments. (We have not had any golden algae outbreaks in the Tempe lakes).

3. **Relevant experience and qualifications:**

The resume for owner and aquatic biologist Janet Scheffman is included with this packet.
16 years experience as aquatic biologist in AZ and 3 in FL.
Bachelors degree from University of Miami
30 years of diving experience

City of Tempe Lake Maintenance Proposal Questionnaire Responses:
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4. **List of References:**

Included on a separate sheet in the packet

5. **Acceptance of terms and conditions:**

All terms and conditions for contract are listed in the Lake and Fish Proposal that is included with this packet and all requested bid proposal paperwork has been signed by the owner of Hurricane Aquatics.

6. **Licenses and applicable certificates:**

Office of Pest Management Chemical Applicators License for Janet Scheffman was issued in 1994 and has remained current.
Office of Pest Management Qualifying Party License in Aquatics for Janet Scheffman was issued in 2001 and remains current.
Business License for Hurricane Aquatics was issued in 2001 and remains current.
SCUBA certification for Janet Scheffman issued by NAUI in 1980.

7. **Copies of typical reports included in packet:**

A copy of the last weekly service report for City of Tempe Lakes
A copy of a monthly test for temp, dissolved oxygen and salinity in City of Tempe Lakes
A copy of weekly and monthly laboratory water testing for City of Tempe Lakes

Supplement #1:

Fish Populations and Fisheries Consulting

Hurricane Aquatics and Fresh Catch Fish Company have a long successful history of managing the lakes for the City of Tempe Parks. When we started in 2001, some of the lakes contained unsightly weed and algae growth that raised complaints from fishermen, boaters, and the general public. As part of comprehensive biological management plan the parks were started on an aggressive fish program. The use of tilapia and white amur greatly reduced the weeds and algae, and the goldfish and koi consume midge and mosquito larvae. Maintaining appropriate stocking levels has been effective so the program is currently being sustained with only a periodic maintenance stocking.

The following is a sample table indicative of our annual review and stocking suggestions. We provide Tempe fish stocking recommendations every year based on the City's water quality goals and current water quality issues. We pass on our quantity buying power in the form of extremely competitive fish prices.

SPECIES	SIZE	STOCKING RATE/ACRE	($) DELIVERY CHARGE AND STOCKING PERMITS	($) PRICE (*)
TILAPIA	½LB – 1LB EACH	100-500	42.50 per park	5.50 / lb
CATFISH	1-2LBS.	25-45	42.50	2.71/ lb
KOI	1 lb + Brood stock	25-45	42.50	18 / lb
GOLDFISH	1-2"	1,000	42.50	90 /1,000
WHITE AMUR	12-14"	20-50	42.50	10 ea

(*) Prices may vary depending on quantity ordered at one time.

It is in Tempe's best interest to continue using fish as a core component of urban lake management. The program is sustainable and minimizes the need and associated cost for chemical treatments while providing sport fishing recreation opportunities for residents.

Hurricane Aquatics, LLC

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Fish stocking in urban lakes for biological control

Fish stocking in manmade lakes is one method lake managers use to keep lake systems healthy and aesthetically pleasing. Different species of fish are used for different biological controls. Using fish is a long term and cost effective method to control algae, weed and aquatic insect infestations. The addition of fish to lakes can greatly reduce the amount of chemical treatments needed. The amount and type of fish stocked are based on:

- Current and past lake conditions (algae, weed and/or insect populations)
- Numbers of fish stocked depend on the severity of the algae, weed or insect infestation
- Stocking history
- Observations of the current fish population
- Desired sport fish programs
- Presence of predator fish

Listed below are the most common type of fish stocked and their various applications:

- **Tilapia:**

Tilapia are an African species that are stocked to control the growth of bottom and filamentous algae species. These fish are cold intolerant and sometimes die off in large number in the winter months. However, they are also a very fecund species (reproduce in large numbers) and their numbers come back up quickly in the warm months after a fish kill. These fish are effective at controlling lyngbya (bottom algae) that is very difficult and expensive to control chemically.

- **White Amur (grass carp):**

Grass carp are a member of the Chinese carp family and they are stocked to control the growth of rooted aquatic weeds. These fish have a voracious appetite and consume large quantities of weeds and grass on a daily basis. The fish are more expensive because the ones that are stocked must be sterile (as required by the Arizona Game and Fish). Because these fish do not reproduce a maintenance stocking is needed every few years to replace the fish that die off and the large, lethargic fish that are ineffective. These fish require a special permit from Game and Fish that must be renewed on an annual basis.

- **Goldfish and Koi:**

Koi and goldfish are both members of the cyprinidi (minnow) family. The koi are generally much larger fish and are favorites with hobbyist for their striking patterns and coloration. These fish are used to consume aquatic insect larvae that are buried in bottom sediments. Midge flies and mosquitoes both have larval stages that live in and on the bottom. Fathead minnows are sometimes used for larvae control but the goldfish and koi are proven to be more effective.

- **Shubunkins:**

These fish are also members of the Cyprinidis family like the goldfish and koi. The major difference is that their dorsal (back) sides are darker in color. Like the goldfish and koi these fish feed on the larval form of the midge fly that begins their life cycle in the lake bottom. These fish are used in clearer water because their coloration helps protect them from Blue Herons and other predator birds. These fish will start reproducing when they reach 6" in size and they are prolific breeders.

- **Israeli Carp:**

This fish is a strain of the common carp. This species is an omnivore that will consume organic detritus, aquatic weeds, insect larvae and pupa. Their preferred food sources are bloodworms (the larval stage of midge flies). Like the white amur these fish are well suited to the desert climate and they grow quickly when there is abundance of food. However, unlike the white amur these fish will breed and being reproducing at 2-3 years of age. These fish are popular with fly fishermen.

- **Channel Catfish:**

Channel cats are scavengers and are effective at consuming the bodies of dead and dying fish and they help to lessen the impact of a winter tilapia fish kill. These are hearty fish and are very popular sport fish in lakes with a catch and release fishing program.

- **Largemouth Bass:**

Like the catfish this is a popular sport fish in urban lakes. These are top-level predator fish that feed on other fish species. These fish are effective in lakes with large (excessive) fish populations. These fish are effective at consuming the fry (juveniles) of other species and help to keep the populations of other fish species in check.

- **Bluegills and Fathead Minnows:**

These two species are frequently stocked in lakes with a sport fishery that have bass or other predator fish. These are forage base fish that are used as the primary food source for the larger fish species. Larger bluegills are also popular in lakes that allowing fishing. These species are generally not used in the lakes that have no urban fishing program.

- **Mosquito Fish**

Gambusia (mosquito fish) are voracious eaters and can consume over 200 larvae in the span of an hour. These fish will begin to spawn with in a few weeks after stocking. This fish feed actively most of the year (until water temps fall below 50 F) and they are a hardy species that adapt well to the water conditions in this area.

If you have any questions please contact Hurricane Aquatics at (623) 516-8995.